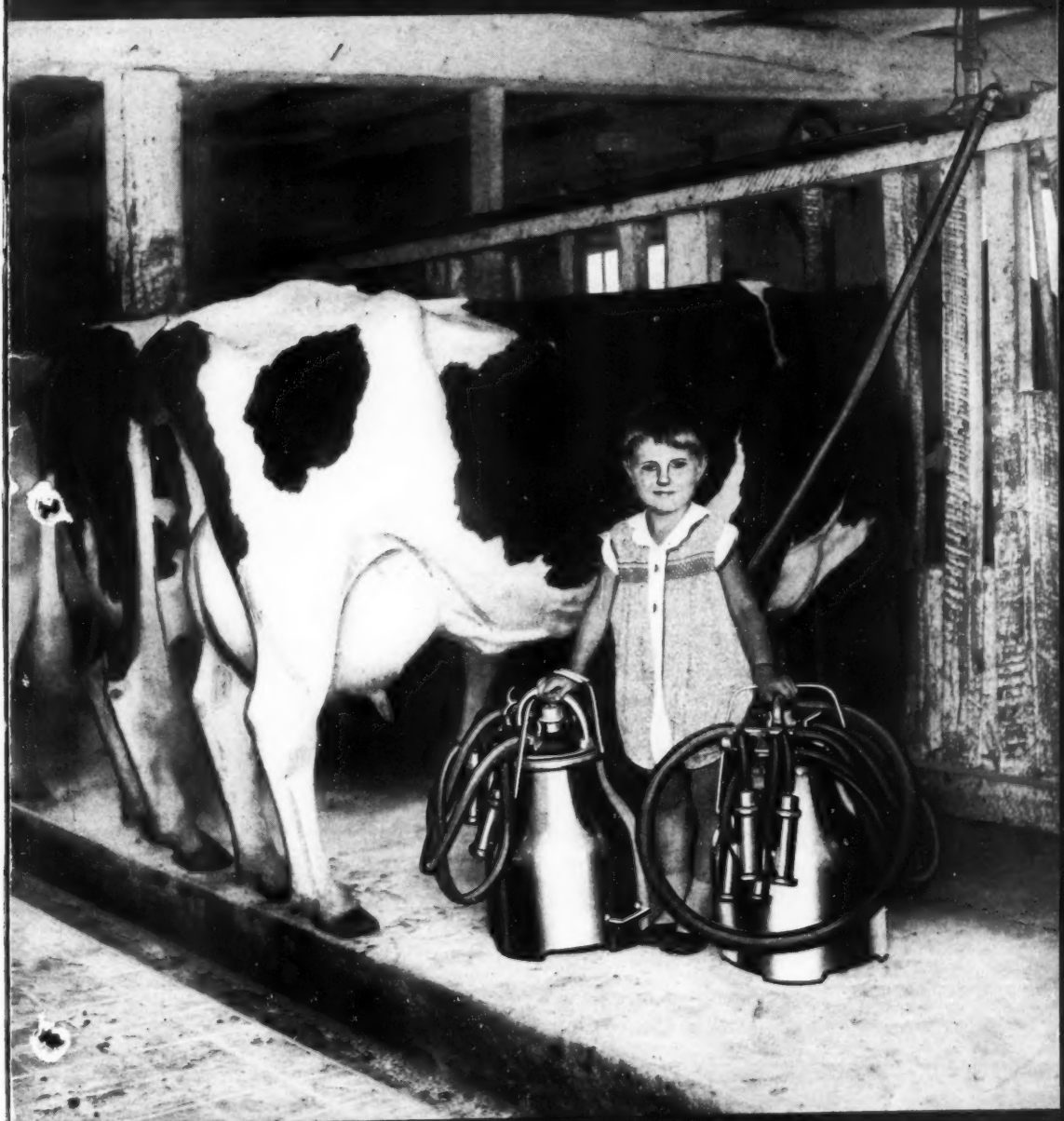
Electricity on the Farm

A MONTHLY MAGAZINE FOR THE RESIDENCE RURAL FAMILY



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1931

Farm women who are slaves to their stoves have little time for other than kitchen chores.

DOES COOKING TAKE TOO MUCH TIME?

WHY put up with such old-fashioned drudgery when an Electric Range will set you free? Its Electric Timer will handle all of your baking and roasting automatically, doing away with the testing, watching, and waiting that requires so much time now.

Besides there's the Automatic Heat Control that eliminates guess-work and enables you to cook everything to just the right turn. And no more blackened pots and pans or soiled furniture—the Electric Range provides clean, flameless heat.

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ASK YOUR LOCAL DEALER

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March, 1934
Vol. 7 No. 3

Electricity on the Farm

IN THIS ISSUE

Milking by Electricity

BY GEORGE W. KABLE

Milking can be either drudgery or a task with a "kick in it." And electric milkers are responsible for adding this new zest to a much disliked job. If not already convinced of the merits of this labor saving device—the electric milker, the article presented by the author on page 4 should be convincing.

Beating the Drouth with Electricity

BY CHAS. E. SEITZ

An irrigation system assures moisture for field and orchard at all times. The author introduces a number of Virginia farmers who, having installed such systems, know their real value and tell you of their experiences.

Electricity vs. Lanterns for Heating Hotbeds

BY CARYLE WARD

A novel and therefore interesting experiment conducted to determine the relative effect of electricity and oil lanterns as sources of heat for hotbeds is the basis of the story by Mr. Ward on page 10. The electrically heated hotbed, of course, carried off the honors.

Saving Coal with an Electric Motor

BY PROF. L. J. SMITH

The budget must be balanced, and where is there a household not anxious to do just that? Prof. Smith on page 11 gives some interesting facts as to how the coal bill may be reduced and thereby contribute its share in making ends meet.

Regular Monthly Features

On the Air, page 12; Questions and Answers, page 13; Electrical Housekeeping, page 14; Under the Chestnut Tree, page 16; What Our Readers Say, page 17; What's New, page 18.

EDITORIAL

MANY farms this year will have reduced acreages in cultivation as a result of A. A. A. contracts.

To secure maximum production from the areas seeded will be the aim of all.

A drought such as experienced last year in certain sections of the country might prove disastrous to many. But there are certain districts where artificial irrigation might be employed if proper equipment is available.

A five-horsepower motor and suitably sized pump, together with necessary piping, will deliver water from a nearby stream or pond right to where it may be needed to irrigate crops.

Many farmers reported doubling their usual crops by power irrigation last year, while neighbors without means for irrigating had to be content with the usual harvest.

Electric pumping is rapidly taking the gamble out of farming.

THE PUBLISHERS.

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Take time to find out how the milking machine is constructed and how to use and care for it before putting it in operation.

MILKING BY ELECTRICITY

By GEORGE W. KABLE

BILL SEIBEL worked in the field until seven o'clock. It was not because Bill liked to work so well, but he was soured on milking cows. During the busy season the fellow who didn't help with the milking worked in the field until the milking was done. Bill was fourteen. He and his brother and sister and their dad were tied to a herd of twenty-five milking cows. They liked the cows and the monthly milk check, but not the drudgery of milking. It was an every night job, with not much chance to get away for even an occasional week-end trip.

Cut Milking Job in Half

An electric milking machine converted Bill. He was the chief milker in less than a week. Instead of four persons, two did the milking, and they did it just as quickly as four had done it previously. Most of the physical discomfort of the job was gone and there was something of a "kick" in bossing that milking machine. And Bill, the former hideout, went into partnership with his dad in the dairy business.

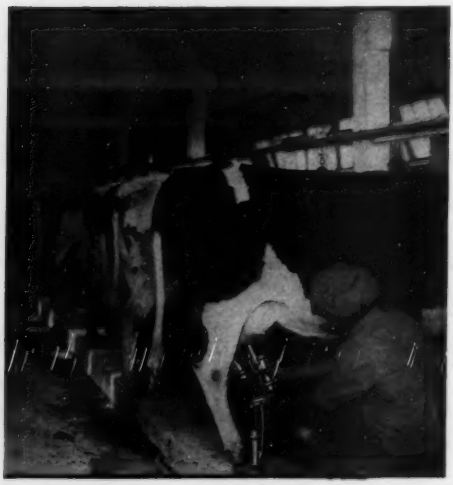
That is a short tale of a Maryland milking machine. It is in tune with the sentiment of the New Deal for the man who works: shorter hours, less drudgery, and a higher standard of working and living.

This is a good time of the year to do a little thinking about a milking machine. The busy season is coming on and with it on many farms spring pastures will bring an increased milk flow.

A number of questions naturally arise when considering the purchase of a milking machine. Does it pay? Will it increase the milk flow? Will machine milking injure the cows? How about the cleanliness and bacterial count of the milk produced? Would it be economical in a herd the size of mine? How much work is involved in caring for a milking machine?

Perhaps the best answer to the question "Does it pay?" is the thousands of machines which are installed and in use. Some few of these may be uneconomical, but in general no machine would be so widely used as the electric milker if it did not pay. Returns on a milking machine may be measured in different ways. On some farms it may be in keeping the boy from leaving home. In many cases part of the "pay" has come from the better quality of milk produced, or even an increase in production per cow. On the average farm, the returns which rank first are in the relief from hand milking and the reduction in labor. With a herd of twenty to twenty-five cows, a milking machine cuts the milking time in half. Iowa Experiment Station Bulletin 248 reports a labor reduction of 34 per cent over hand milking in a herd of seventeen cows and 50.7 per cent in a herd of twenty-eight cows. Milk drawn per hour by hand was 73 lb., as against 157.5 lb. by machine. A survey of a number of Illinois farms where milking was done by hand and with different milking machines showed that on the average 20.8 minutes per cow per day was required for hand milking, and 9 minutes per cow per day by machine.

The size of the herd and the arrangement of the milking barn have considerable to do with



Bill Seibel was an easy convert to machine milking.

the saving in labor with machine milking. At the Government farm at Beltsville, Maryland, for instance, where the "combine" milker was developed, Prof. R. R. Graves reports a milking time of 6.1 minutes per cow per day in a herd of fifty-four cows of which half were milked three times daily. With this combine milker the cows are brought to a separate milking room containing six stalls and three single unit milkers. The milk is carried directly from the cows through sanitary piping, over a scale, and to the milk house where it is pasteurized and cooled with a minimum of handling and with the least possible exposure to contamination. Perhaps the ultimate in machine milking at present is to be found on the Walker-Gordon farm near Plainsboro, N. J., where the milking is done with a so-called Rotolactor at an expenditure of one minute per cow per day.

The amount of electric power used by pipe line milkers in twelve states averaged 2.9 kilowatt-hours per cow per month. For portable machines the power used in four states was 1.37 kilowatt-hours per cow per month.

Milker Reduces Production Cost

Where the labor in milking a herd of twenty to twenty-five cows is reduced one-half, the actual cost of milking, including all other items of cost, is reduced about twenty-five per cent. This reduction in cost is greater with larger herds and somewhat less with smaller herds.

These reductions in cost or in labor through the use of the milking machine are interpreted practically in the release of labor for other jobs, in permitting the milker to spend several more hours per day in the field when good temporary help may be hard to get, or in keeping a few more cows which will add to the monthly milk check without increasing the labor cost.

The effect that milking machines have on the cows is indicated pretty well in surveys made a year or two ago in which the milk flow was found to have increased in forty per cent of the herds which were changed from hand to machine milking. The Royal Agricultural Society of England reported in 1929 that good, quick milking increased the milk flow ten per cent and the fat content as much as forty per cent above slow milking. Mr. W. J. Dougan, an Ohio farmer with long experience in hand and machine milking, obtained an increase under test of two pounds of milk per day, and a twenty-seven day longer lactation period when the milking was done by machine. Still more significant that cows respond well to machine milking is the fact that a large number of cows on official test, including some of the world's record producers, are being machine milked three or four times daily.

Advice for the Operator

These good records are not being made by push button operators. Milking machines must be kept in good mechanical and sanitary condition. Care and skill must be used in milking and the operator must continue to be "cow minded" and not entirely "machine minded."

There have been cases of injury to teats and udders in machine milking, especially with the older type of machines. In practically all cases these troubles are traceable to a poor or careless operator, and not to the machine itself. The consensus of opinion of Agricultural Experiment Stations and experienced dairymen is that with reasonable care and cleanliness cows take kindly to machine milking, give a normal flow of milk, and are no more subject to injury to teats, udders, or general health than with hand milking.

The best testimonial to the quality of milk produced by machine milking is the fact that most of the certified milk today is produced by machine milked herds. In records available from milking machine users, nearly two-thirds report bacterial counts under ten thousand. Because the milking machine is closed there is less opportunity for dirt and sediment in the milk, and dirt on the hands of the milker is practically eliminated as a source of contamination. Where difficulty has been experienced in getting low bacterial counts, the trouble has almost invariably been in the poor cleaning of the milking machine and other utensils.

The care of a milking machine is not difficult. The user must understand in the beginning how-

Milking room, Detroit Creamery Farm. Clean cows, clean barn, and milking machines for producing clean milk.

ever, that much of his success will depend upon his following a few simple rules of cleanliness. A milker which has not been properly cleaned after using becomes an ideal breeding ground for bacteria.

Method of Washing Machine

Milking machines may be washed either with a brush or by the suction method. Investigations at the Government farm at Beltsville, the Dominion Experimental Farms at Ottawa, and at Purdue University have indicated that the suction method is quite satisfactory and produces bacteriological cleanliness. Immediately on completing the milking, cold water is drawn through the machine by operating it with the teat cups immersed in a pail of water. While the machine is running the teat cups are alternately lifted out and immersed in the water to produce an intermittent, scrubbing flow through the machine. The cold water rinses out the milk without cooking it. One and one-half gallons of water at a temperature of 165 degrees is then drawn through the machine in a similar manner. The pail and head are then brushed with hot water and the same water used for washing the outside of the rubber parts and pail. Teat cups and tubes are either filled with a disinfecting solution and stored on a special rack, or immersed in a crock of disinfectant until milking time. After assembling the unit for the next milking, a pail of cold water is drawn through as a final rinse. Once each week the machine should be taken apart, examined, and washed with a brush. The small quantity of hot water needed for washing can be furnished conveniently by a number of types of inexpensive electric water heaters which are now on the market. An excellent bulletin (Bul. 348) on this simplified method of cleaning milking machines has been issued by Purdue University.

The time required to clean the milker is about the same as for milking an extra cow, or less than twenty minutes for two units.

The choice of a milking machine will depend on the size of herd, the method of handling and housing the cows, the reliability of your dealer, and your personal preference. Machines have been greatly improved in recent years, and any type that has come through the development period and is still being sold will have friends and advocates. Portable machines use less power and some cost less, but they are not so widely used as the pipe line types. The New Zealand system of bringing the cows to the machine has some advantages in reducing the handling and carrying of the milk. It may have additional merit also in cutting down the cost of housing, particularly under mild climatic conditions. Where special low count milk is produced, and with good sized herds, the combine milker with its closed delivery system is becoming popular.

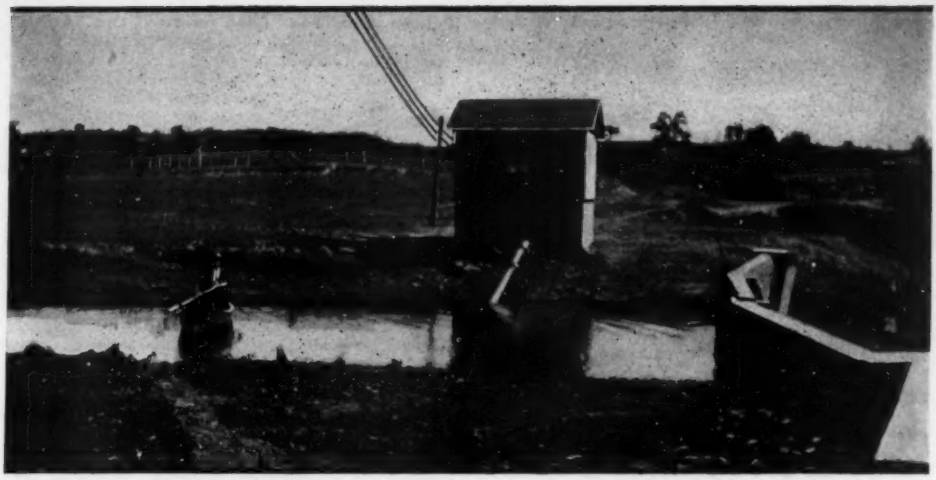
"Squeeze type" milkers with prospective replacements—now superseded by an electric pipe line machine.

Will Pay Its Way

It has been stated that a milking machine will pay its way with a herd of fifteen cows. Some are producing good returns with less. The number of cows is only one consideration in determining the desirability of a milking machine. Some herds of ten cows give more milk and consequently require more milking than other herds of twenty. The physical inability of a dairyman to continue hand milking, the operating of the machine by the farm women in case of emergencies, the special aptitude of some farmers for machine methods, or the necessity for reducing chore labor during busy seasons may be the controlling factor. If the matter resolves itself into one of first cost, there are some machines on the market suitable for small herds, in which the overhead investment per cow would be no greater than with larger herds and more elaborate equipment.

Not a Luxury—a Modern Tool

A milking machine is not a luxury; nor is its place in agriculture limited to the upper crust of farms. It bears about the same relation to hand milking that the automobile bears to the horse drawn buggy. Some farmers still ride in buggies. They should. Others would have more money if they did ride in buggies; but they get more satisfaction out of an automobile than they would from the additional money. Neither can be taken along when Gabriel blows his horn. The vast majority of farmers who own cars and trucks, however, do so because it's good farm business to own them. So with the milking machine. It's a modern tool for the business farmer to do an old job in a better and more profitable way; and in addition it helps to change the dairy farm from an old man's drudgery to a young man's game.



Pump plant, dam and reservoir which supplies water for irrigation of 75 acres of apples on Garland Hopkins farm in Botetourt County, Virginia.

BEATING THE DROUTH WITH ELECTRICITY

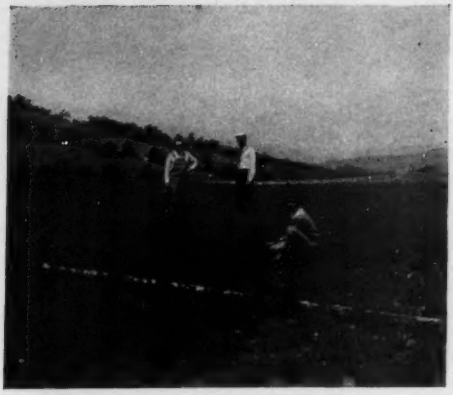
By CHAS. E. SEITZ

"I MORE than doubled the yield of the ensilage corn I irrigated this season," replied Mr. W. M. Bradley, a dairy farmer of Botetourt County, Virginia, when asked for the results of his irrigation.

Although he did not start his irrigation until late in the season, Mr. Bradley was able to greatly increase the yield of ensilage corn. The value of the increased yield was more than sufficient to pay for the installation and operating costs of his irrigation system. Mr. Bradley said, "My biggest mistake was that I did not start my irrigation earlier in the season. If I had started earlier, I am sure I would have increased the yield much more, but even so, the later irrigation paid me well. I am convinced that the irrigation of ensilage corn will pay me practically every year, as there is seldom a year in which we get sufficient rainfall at the right time for a maximum yield of ensilage corn."

An examination of the rainfall records in Virginia for the past 30 years show that one year out of every three has been below average in the amount of rainfall. Four extremely dry seasons have occurred in the last ten years. In Virginia as in most other Eastern states there is usually a dry period of from two to several weeks in practically every year when irrigation could be used to great advantage. These seasonal drouths are a serious menace to the profitable raising of many crops. The serious drouth of 1930, followed again two years later by a drouth almost as severe in some sections, has convinced many farmers that rains cannot be depended upon every year to supply all the necessary moisture for successful plant growth. Putting electricity to work to beat the

These two small pumps belted together and operated by the 5 H. P. portable farm motor draw water from the small stream in the foreground and deliver it through the 5-inch pipe line up over the hill to Mr. Bradley's corn field.



Alfalfa in foreground did not get any water, that in rear did. This growth was secured in about a week after one good irrigation on the J. P. Woody farm, Botetourt County, Va.

drouth of the past summer has proven a good investment for a number of Virginia farmers.

Mr. Bradley had a small pump which did not have sufficient capacity for irrigation, so he purchased an additional pump and connected them both to his five horse-power portable electric motor. These two pumps, together, deliver about 50 gallons of water a minute. The water is pumped from a small stream through about 1,000 feet of five inch pipe to the corn field about 75 feet higher than the stream. The pipe is second-hand boiler tubing purchased locally at very low price. The water is distributed in the corn field through shallow furrows along the corn rows.

The cost of the irrigation plant including pumps, pipe and all labor was approximately $140. This figure does not include the portable electric motor which is used for ensilage cutting and other farm power jobs. The pumps were started July 15 and operated 25 days. The electric bill for pumping amounted to approximately $12.00.

According to Mr. Wills, the local county agent, the yield was increased at least 3 times as a result of irrigation. If we figure the yield as only doubled due to irrigation, this increase would total 50 tons of ensilage. I am informed that $4.00 a ton is a fair value to place on ensilage this year. Irrigation, therefore, returned Mr. Bradley at least $200.00 or about $48.00 more than the cost of installing and operating the irrigation plant.

Mr. J. T. Woody, a neighbor dairy farmer of Mr. Bradley's, installed a pump late in the season to use for irrigating alfalfa. A ten horse-power motor drives a centrifugal pump that delivers about 180 gallons per minute. The water is pumped from a small stream through several hundred feet of three inch pipe against a head of about 50 feet to the alfalfa field where it is flooded over the field by gravity. The pump, motor, pipe and all labor cost about $300.

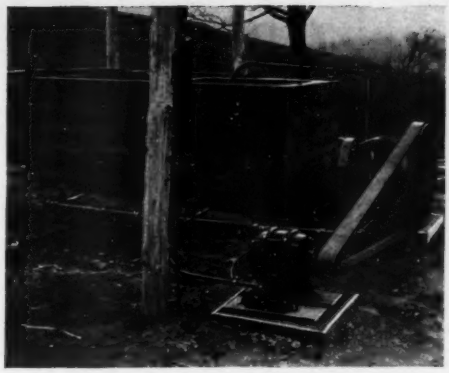
Mr. Woody says, "I did not get my irrigation outfit installed soon enough in the season to get the best results. I irrigated only a part of the ten acres, but next year I expect to put in larger pipe for the main line and use the present main for distribution pipe lines so that I can irrigate the whole ten acres. My irrigation enabled me to get four cuttings of alfalfa on the part watered while I only got two cuttings on the part not watered. The irrigation increased the yield by five tons. At $20.00 a ton this increase amounts to $100.00. My electric bill for pumping was $30.00. If I had started my irrigation soon enough and had covered the whole ten acres I feel that the increased yield would have been sufficient to pay for the entire cost of my plant. With irrigation I can get five cuttings of alfalfa a season and average one ton to the acre for each cutting."

Orchard Irrigation Successful

Mr. C. S. Ikenberry, an orchardist of Botetourt County, got some splendid results from irrigation in his orchard this season. Mr. Ikenberry says, "I increased the yield of apples at least 50 per cent in the eight acres of Yorks and Staymans that were watered by the gravity system. One section of my orchard, of about eight acres, that I could not water by gravity was irrigated by pumping water through my spray pipe lines. The trees in this section did not receive sufficient water for the best results but even the small amount of water they received increased the yield of delicious by at least 30 per cent."

Mr. Ikenberry is fortunate in being able to irrigate part of his orchard by a gravity water

Ensilage corn on W. M. Bradley farm. The corn row in foreground did not receive any water, while that in rear did. Note the contrast.



Stationary spray pumping plant which was used to irrigate 8 acres of Mr. Ikenberry's orchard.

supply. A five inch pipe line carries water from a small stream by gravity to the orchard where it is distributed through furrows down the tree rows. Such a system is ideal as there are no pumping costs to be reckoned with. Unfortunately few farms are so situated that a gravity water supply can be used for irrigation.

Mr. Ikenberry installed a stationary spray plant in his orchard in 1932. He used this system for applying six different sprays. When the dry season came he put the spray system into use for irrigating the part of the orchard he could not reach with the gravity system. The spray pump is operated by a five horse power motor and has a capacity of about 20 gallons per minute, so irrigation by this method was a slow process at best. The spray hose was attached to the hydrants and used to water each individual tree. Each tree watered in this way received about 200 gallons of water for each irrigation. This was repeated each week for five weeks of ten hour days. The cost was eighty cents a day for operating the electric motor to drive the pump. Even with the small amount of water used, irrigation by this method proved very practical and was a profitable undertaking. Mr. Ikenberry estimated that the crop of fruit irrigated in this manner was increased 30% in volume. The apples packed out well both in size and color.

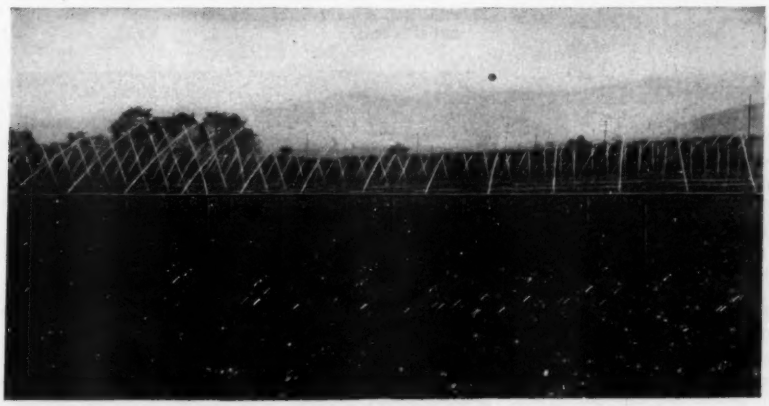
Mr. Garland Hopkins installed an irrigation pumping plant in a 75 acre orchard in Botetourt County during the drouth of 1930. He figured that the increased yield he got that year from irrigation more than paid for the cost of the plant. He recently told me that irrigation this season would increase the yield in this orchard by at least 5,000 bushels of marketable apples. In other words he will about pay for his irrigation plant again this season from the increased yield. A 40 horse-power motor operates a 750 gallon per minute pump to force water through about 2,000 feet of eight inch pipe line to the high point in the orchard which is about 100 feet elevation above the pump.

When I asked J. W. Sanderson, a truck farmer of Roanoke County, Virginia, if he considered his overhead irrigation system a good investment, he replied, "I do not owe a cent on my irrigation system. I have paid for it all out of the proceeds from the crops I have raised since installing the system. I took what cash I had in the bank in 1930 to start my system. I have had a good living and have paid for this system in two years." Mr. Sanderson states that he has employed twice as much labor this season as he ordinarily would have used in a dry season without irrigation.

Irrigating the Truck Farm

The drouth of 1930 convinced Mr. Sanderson that he must irrigate if he continued in truck farming. During the 1930 season he did not make expenses as practically all of his crops were ruined by the drouth. Determined not to face another year without irrigation he installed overhead irrigation lines on about 9½ acres during the winter of 1930. Mr. Sanderson now has 21 acres equipped with permanent overhead lines. The investment in this plant is about $6500.00. The pumping plant, located on a small stream over half a mile from his farm, consists of a 15 horse power, three phase motor direct connected to a double suction centrifugal pump. This outfit delivers 115 gallons per minute through a five inch main pipe line against an actual head of 130 feet. About 2 acres can be irrigated at one time. At the local schedule of rates, it costs Mr. Sanderson about four cents per 1000 gallons to pump water for irrigation. He figures roughly that it cost

(*Continued on page* 16)



Overhead irrigation on the J. W. Sanderson truck farm near Roanoke, Va. Automatic oscillators operate each overhead line and produce even distribution of water on each side of pipe line.

ELECTRICITY vs. LANTERNS for HEATING HOTBEDS

By CARYLE WARD

EARLY last year Mr. David T. Battiste, Mobile Co., Alabama, began a systematic test to determine the relative effect of electricity and oil lanterns as sources of artificial heat for sweet potato hot beds. It was the first experiment of its kind out in that county.

In one end of the hot bed an area 4 by 18 feet was devoted to heating by electricity, the installation including a thermostat for temperature control. Kerosene lanterns were used in the remainder. The current was switched on and the lanterns lighted on the same day, February 1.

A month later the electrically heated section had produced a healthy supply of plants ready for transplanting, while the plants were barely through the ground in the other portion of the bed and did not become available for transplanting for two weeks longer. Mr. Battiste obtained 20,000 early plants from that section, a quantity sufficient to set out two acres. This number of plants would have cost $50 had it been necessary to buy them at that time of the year, he said. He placed the prospective crop yield from these two acres at 100 bushels per acre, with indications of the potatoes reaching the market early enough to bring around $1.50 a bushel.

Plant Yield Increased

Another significant result was the fact that between February 1 and the last of April the area heated by electricity yielded 50,000 plants for setting, against 30,000 obtained from an equal area heated by lantern. During this period, Mr. Battiste said, plants were pulled four times from the electric hot bed, compared to twice from the lantern heated bed.

Mr. Battiste said the total cost of electricity for the whole period it was used in hot bed heating ran to about $15.

"Any way you figure it," Mr. Battiste said of the results of the experiment, "the use of electricity showed obviously profitable advantages over lanterns as a means of hot bed heating. I expect next season not only to apply electricity to sweet potato hot bed heating upon a wider scale, but to extend it to tomato beds."

Potatoes in each section of the hot bed were bedded in generally similar manner and heavy paper and canvas spread across its entire length to preserve the heat supply in the beds. In the electrically heated area, two circuits of lead covered resistance wire in lengths of 60 feet were laid in strands seven inches apart on a cinder base five inches deep. Each 60-foot cable carried a connected load of 400 watts, or 6⅔ watts per per foot, and occupied an area 4 by 9 feet. After the cable was laid, there followed a five-inch layer of soil in which the potatoes were bedded and then a top soil three inches deep was spread over the bed. When the current was first applied to the hot bed, the thermostat was set at 85 degrees, from which it was gradually reduced to 70 degrees after germination of the potatoes had begun.

Mr. S. R Gibbons, agricultural engineer of the Alabama Power Company, cooperated in carrying out this test.

Above: In one month's time the plants in the section heated by the kerosene lanterns had barely come through the ground.

Right: Electric soilheating produced this healthy growth of plants in the same space of time as those in the lantern heated section—one month.

SAVING COAL with a motor

Saving coal means saving dollars. Its purchase is an important item on the family budget and any saving thereon is worth investigating. Prof. Smith presents some interesting facts on this subject.

By PROF. L. J. SMITH

BY means of electricity we can save from three to five dollars a ton on our coal bill. We can use it to increase the efficiency of our furnaces at least 15 per cent, thereby effecting another great saving.* With electricity we can get automatic heat control and more uniform heat with the minimum of labor, and all this at a relatively small outlay. The electrically driven automatic fuel feeding devices now being perfected will do these things.

If the reader has not given serious thought to these recent developments, he cannot appreciate what this statement really means. Suppose, as a concrete illustration, that for the four winter months, two and one-half tons of coal are consumed monthly, that one and one-half tons a month are required for two additional months, and that another ton for October and for May is needed to complete the year's house heating requirements, fifteen tons in all over a period of eight months. This is not high for the Northern states; anyway, it will serve as an illustration. An average saving of $4.00 a ton for the cheaper coal would mean $60.00, but the automatic stoker gives a greater heat efficiency so that thirteen tons are sufficient instead of the fifteen tons. The saving is $52.00 plus the cost of the two additional tons of higher grade coal.

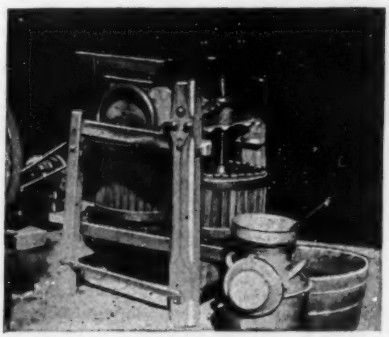
Put it another way. Suppose that lump coal is $12.50 a ton and the fine coal of equal heat value is $8.50 a ton. The fifteen tons of lump coal would cost $187.50. The thirteen tons of fine coal cost $110.50. The saving is therefore $77.00 less the cost of running the stoker. This is not an argument for automatic domestic stokers, though they are the next great convenience that is coming into American home life; but an excellent illustration of what this mysterious source of light, heat and power can do for a nominal sum each month. Without it, this great new contribution to American home life would not be possible.

"But," someone will ask, "just about what will the cost of electricity be per month for operating the automatic stoker?"

The amount varies with the number of tons consumed. The best way to think of the matter is in terms of the cost of electricity per ton of coal. Last winter the writer had a special meter put on a local automatic house heating job. It showed that, for this installation, it cost nearly 65 cents a ton for the electrical energy to operate the stoker. In tests with a later and more efficient model it cost 50 cents a ton, the price in each case being based on 3 cents per kilowatt hour. Not to be too optimistic, let us use 60 cents per ton, on which basis it would cost $7.80 to operate the stoker in the eight month period while burning thirteen tons of the cheaper coal, an average of less than a dollar a month for eight of the twelve months. For a dollar a month one gets greater comfort and more uniform heat with less labor, more healthful conditions, and fewer ashes to carry out, for the automatic heating burns the coal more completely.

When it turns warm the stoker does not run; but as soon as the weather changes the automatic control starts the little motor, putting fuel into the fire box. A neighbor of the writer says that once his stoker did not operate for thirty hours, but when the weather turned cold and the temperature in the living room dropped below 70 degrees, the stoker started up and there still was enough fire in the furnace to ignite the fresh entering coal and heat up the house.

The time is not far off when by means of electricity, the average American home will be heated as uniformly and satisfactorily as the better hotels and apartments, and this additional comfort will be had at a lower fuel cost.



Cider is made electrically, using a one-horse motor for power, on the Schalliol farm near Wakarusa, Indiana.

*State College of Washington Engineering Bulletin No. 39. Langdon and Dana.

ON THE AIR

Conducted by James J. Harvey

Some Facts About Radio City

THE most modern and complete broadcasting headquarters in the world, located at Radio City, opened a few months ago, contain many interesting types of equipment which represent the most advanced branches of radio and structural engineering.

Sixteen of 35 available studios were ready for use on the night of the opening.

The Auditorium studio is the largest in the world. It is 78 by 102 feet and three stories in height. Along one side there is a balcony which will seat more than 250 spectators. Opposite this is a semi-circular stage which is large enough to accommodate a 100 piece orchestra.

A singer learns about the fascinating "workings" of radio's newest headquarters, Radio City. Here John McCormack, the famous tenor, under the guidance of O. B. Hanson, NBC manager of technical operations and engineering, is inspecting the main control room.

The many other studios are smaller and designed to meet the requirements for particular types of broadcasting. On one floor there is a studio which will be used exclusively for the broadcasting of children's programs.

Since there are no windows in the studios, the air is conditioned by one of the largest air conditioning plants ever installed. The plant circulates air continually.

All of the studios, corridors, and dressing rooms in the radio headquarters are decorated in fabric and wood which is designed to meet the acoustical requirements of the studios.

Although we usually think of radio as wireless many miles of wire are necessary at broadcasting stations. In Radio City, for example, enough wire has been used to stretch from the top to the bottom of the tallest building in the country five thousand two hundred and eight times. The cabling would span that distance 440 times. And this does not include the wire used in the actual station transmitters, but only that installed in the studio headquarters.

The decorations have been based on either harmonizing or contrasting colors. The only exception to this is found in four speakers' studios where it was possible to use wood paneling.

Sound proofing is the most complete job of its kind ever attempted. All of the studios have floating floors, walls, and ceilings which are separated from the framework of the building itself. Each of these "boxes" is surrounded by tons of rockwool, and there are heavy felt pads between all points where the studio must come in contact with the building. Several of the studios have sliding panels in the walls which may be mechanically operated from control rooms to vary the acoustical effect by changing the extent of exposed hard surface.

The main control room could not be located in the center surrounded by the studios, a practice which is customary in radio. Here the technical equipment occupies almost a complete floor which is located with studios above and below. Power and battery rooms, shops, visitors' gallery, and other equipment are located near the main control room.

In its entirety the broadcasting plant is equipped with every known facility for approaching perfection in transmitting programs from a studio to the loudspeakers in our homes.

• • •

They Supply Their Own Sound Effects

SOUND effects men aren't much worried over the Clara Lu 'n' Em broadcasts, for these popular entertainers of the air supply their own.

If the action calls for the opening and closing of a door you can depend on the fact that the girl who is supposed to be walking into the room is actually operating the door. When dishes are being washed the girls themselves are doing the dish rattling, you may be certain.

In one program Em was supposed to be taking swimming lessons, and, all through the 15 minute period, she was thrusting her face into a basin of cold water and emerging, choking and spluttering.

Clara Lu 'n' Em are on the air every morning except Saturday and Sunday with their back fence gossip on the day's news.

• • •

TWO things bother Charlie McAllister, San Francisco NBC character actor. One is having a picture made, the other, having his hair cut. He always puts off the latter ordeal until Mrs. McAllister threatens to buy him a fiddle.

INDEX AVAILABLE

The index for 1933 issues of "Electricity on the Farm" is now off the press. Readers may secure copies gratis upon request. Address: "Electricity on the Farm," 24 West 40th Street, New York, N. Y.

Questions and Answers

Conducted by H. J. GALLAGHER

Question: *We have a vacuum cleaner. It uses more electricity than a ¼ h. p. motor on the pump. Why?*

Answer: The ordinary vacuum sweeper consumes about 150 watts per hour which is approximately one-third the energy consumed by a ¼ h. p. motor in the same period of time. The only satisfactory correction for the condition you describe is to have your vacuum sweeper examined by a qualified electrician.

Question: *I have a small 60 cycle 110 volt 3,800 R.P.M. vacuum cleaner motor. I would like to use this motor to operate a sewing machine but it runs too fast. Could I reduce the speed to about 1,400 R.P.M. by using a 10-18 volt transformer? How could I use the transformer on a jump spark ignition for a gas engine?*

HARRY E. JOHNSON,
Rochester, Indiana.

Answer: A 110 volt motor will not operate on service from a 10-18 volt transformer. On 10 percent rated voltage the average A. C. motor will have no starting torque and will only have about 50 percent of its starting and running torque with 70 percent rated voltage at the terminals.

There are two ways your motor may be connected to the sewing machine to operate satisfactorily, a V pulley on the motor shaft can be belted to the smaller V pulley on the sewing machine, if the motor pulley is one-half the diameter of the pulley it drives the operating speed will be reduced one-half. The second method is to apply a V pulley on the motor direct to the hand starting wheel of the sewing machine. To eliminate slipping stretch a piece of inner tube over the hand wheel. The smaller the V pulley on the motor the slower the machine will run.

A heavy duty 6 volt transformer of 40-60 watt capacity in combination with a jump spark coil may be used as an ignition system for a gas engine. Higher voltage through transformers larger than 6 volts rapidly burn out the vibrator points.

Question: *We have a 32-volt farm light plant which we haven't used for five years. We still have the batteries. Some of the batteries are bulged out on top. The sediment in the bottom doesn't touch the plates. The water is about two inches below the plate level. Can these batteries still be used if they were charged up, even though the tops are bulged up? The generator is a shunt wound, 35 volt, 7 K. W., 2,175 revolutions per minute. If these batteries can not be used can a person operate some lights with it if one has an engine running the generator without the batteries hooked up. We still have the switch board hooked up to the generator. Can this generator be used to charge up an auto battery? Can this generator be used as a 115 electric motor if it can't be used for the light plant?*

Can a person make a dinner bell with a Ford horn with 115 volts without a transformer to reduce the current?

Can one transformer be used to run two electrical appliances such as the one above mentioned and a burglar alarm?

ARNOLD METSCHKE,
Scribner, Nebr.

Answer: In my opinion your storage batteries cannot be used.

It would be possible to operate a 7 K. W. generator without storage batteries for lights and for charging the auto battery but it would be impractical and much too costly to consider.

A direct current generator can be used as a D. C. motor on direct current only, never on alternating current. A 7 K. W. 32 volt generator operating on 115 volts D. C. would be too inefficient and too costly to operate.

A 6 volt auto horn operates on direct current only; it would not operate on 115 volts D. C.

Transformers are not used to change voltages in direct current, consequently a transformer would be of no assistance to you.

In alternating current 115 volts could be reduced to 6 volts through a transformer and a number of 6 volt alternating current appliances could be operated depending upon the capacity of the transformer.

A common method of remagnetizing Ford magnets is to use five or six 6 volt storage batteries connected in series. Disconnect the wire from the magnet terminal on the transmission cover to the coil on the dash. Connect the positive pole of the battery to the magnet terminal. Remove the transmission cover. Have a helper turn the engine

(*Continued on page* 18)

turn on the

WATER

WITH the prices of genuine MYERS Electric Water Systems now reduced to below anything you ever expected, you simply *cannot afford* to put off any longer the installation of running water on your place. Let your dealer figure for you the present day costs, and you will quit hand pumping and "turn on the water" before another summer arrives.

Write us today for free booklet and name of your Myers dealer.

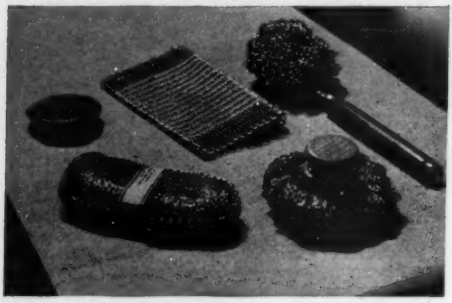
The F. E. Myers & Bro. Co.
363 Fourth St. Ashland, Ohio

MYERS Self-Oiling Water Systems

as Low as $50.50 and up

ELECTRICAL HOUSEKEEPING

Conducted by GAIL MEREDITH



INSTEAD OF ELBOW GREASE

WHEREVER there's cooking, there's washing of dishes. I find these simple tools save time and temper and fingernails when I am finishing up the last of the dishwashing.

The little oblong brush with bristles of steel is made for really vigorous scouring. It will nag away at the most stubborn patches of burned fruit juice until they let go, or it will scour the inside of the oven of an electric range when grease from roasting meat has spattered the walls. The mop of metal rings on a steel scraper is made especially for iron skillets and kettles and for the Dutch ovens we use for long slow cooking on top of the stove. It is a bit too heavy handed for the lighter metals in general use, but it earns its keep valiantly on the occasions when we cook in cast iron.

The two short handled brushes are for lighter jobs. The round one has bristles of heavy coarse fibre, the other slightly softer bristles interspersed with fine brass wire that scours but does not scratch.

Next come various cleaners of soft metal. In one, fine copper wire twisted around a heavy cord is woven into a square pocket that the manufacturers call a mitt. They recommend it for pots and pans of every kind, for wooden utensils, for gridirons, and even for finishing up the sink. It is easy to take care of, for it needs only to be rinsed out in warm water and hung up to dry.

In the wire sponges the metal is strung together in links or strands, and mops are made by putting a knob or handle on a loose ball of the wire. The knob gives something to hang onto while we rub, and the long handles are particularly convenient for scrubbing the inside of a kettle. These metal mops not only clean the cooking dishes, but they scour the grease from the drip pans and the oven of the stove.

Steel wool, in bulk, or in the little pads made up with some cleaning agent is recommended for cleaning and polishing aluminum. Sometimes these little pads are sold with a special cake of soap that supplements their work.

The rubber sponges do not go in for any heavy scouring, but they are invaluable aids in scrubbing out the sink when the dishes are done, or washing the lavatory, or cleaning the bath tub. I find that if I sprinkle the porcelain with my favorite cleaning powder, I can rub off the dirt or discoloration with the damp sponge. Then all I have to do is rinse out the sponge with clear water and wipe the surface again.

All these tools are very little things. You can buy most of them anywhere for a thin dime, and for none will you pay more than a quarter. But humble as they are, they play a definite part in what engineers call the mechanization of housework. Anyway, when I use one or the other of them in my daily work, I find that I have less need for that costlier agent our grandmothers dubbed elbow grease.

• • •

A WORD ABOUT CORDS

FOR the sake of trouble-free service from your electric appliances, it is well to give a thought now and then to the cords that carry the current.

I do not mean their selection, though that is important, too. But nowadays any uncertainty about quality is done away with. You know you are getting dependable cords if they carry the little circlet with the printed message "Underwriters' Laboratories Inspected Cord." I am thinking rather about the care of this cord, or perhaps more particularly, of the older cords that have been in use some time. A year or so ago Mr. George Kable, Director of the National Rural Electric Project in Maryland, in a report on the care of farm equipment included a paragraph on Plugs and Cords which read:

"Electricity causes relatively few fires and accidents. Of the few which are caused by electricity, the majority are due to the improper use of extension cords, the use of poor extension cords, or to makeshift housewiring. Never touch any lamp, appliance, or extension cord when in the

bath tub or standing in water. Avoid frayed cords and plug connections. Cut off the frayed end and make a new connection; and be sure the strands are twisted and all securely held under the binding screws. When extension cords wear, or sharp strands of wire stick through them, they are dangerous and should be discarded."

Last year in a circular dealing with the same subject Gail M. Redfield of the Department of Home Economics at Purdue University Agricultural Experiment Station carried the matter still further with these recommendations:

1. "In handling an appliance cord, always grasp it by the plug and not by the cord itself. Rough handling is hard on the fine wires inside the cord, and will eventually cause them to break, and allow them to cut through the protective covering in which they are wrapped to keep them from touching each other.
2. "Do not allow one of the wires to break or the insulation to become damaged permitting the two wires to come together or current will no longer travel through the cord to the appliance.
3. "The appliance cord should not be twisted or bent. Store it where it will be reasonably straight or at least where it will not be bent sharply.
4. "Watch the cord for signs of wear and make repairs before the cord becomes useless.
5. "If the cord is provided with a switch, make all cord connections first, then turn current on by means of the switch."

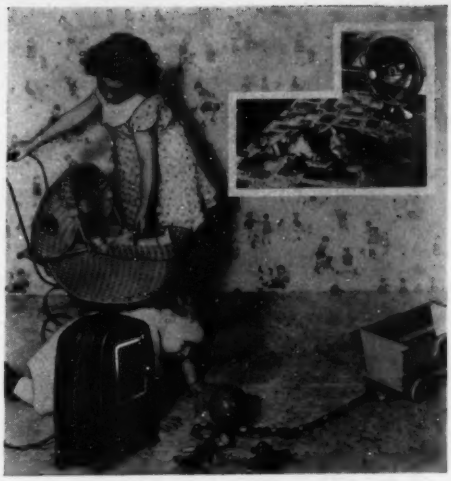
• • •

CHILL CHASERS

IF you are looking for something to chase the chills out of the cold days that are bound to come after the stoves are down or the furnace fire goes out, you cannot find anything better than a small electric heater.

These heaters give instant warmth that is clean, and odorless and smokeless. They can be used anywhere within a cord's length of a convenience outlet. On cold, bleak days they bring comfort to babies, invalids, to the old. They make getting up easier for every member of the family when he knows that he can turn on the heat as he turns on the light and dress without shivering.

There are many kinds to choose from. Most familiar of all is the radiant heater with the coil



Warm and cozy for folks to play. Inset: A bowl type heater.

of wire set in a deep bowl with a shining surface to reflect the heat. This is the heater we can pick up with one hand and set or stand or hang where we will.

These heaters warm you up the very fraction of a second you push the plug in. A good one is weighted at the bottom so it will not tip easily and has a substantial guard over the face to keep little hands and clothes away from the coil.

If the children should knock it over in their play, this guard protects the rug or floor. You have only to set it on its feet again; there is no harm done.

Then there are air heaters that give off heat enough to warm up a small room. Some of them look like little radiators and give off heat throughout their length. Some are metal cabinets. The heating element is set back of an open grill on the face of the cabinet. The cold air comes in at the bottom, is heated by the red hot wires, and flows out through the grill as if it were a register in the wall.

Many of the recent heaters have an electric fan that blows hot instead of cold. Mounted behind the heating element it constantly blows the

BROOD CHICKS ELECTRICALLY *with the* **TRUMBULL Electric Brooder**

Built on a New Principle

Cutout Shows Inverted Cone

Which provides a **uniform distribution of heat** and **adequate ventilation** at a **low operating cost.** Entirely free from cold drafts; no other heat required. Two sizes: 100 and 350 Chicks.

Write for illustrated Folder and Bulletin giving results of tests during recent cold snap. 20° F. below zero.

THE TRUMBULL ELECTRIC MFG. CO. Dept. W-12 Plainville, Conn.

A GENERAL ELECTRIC ORGANIZATION

10% Extra Wool from SAME SHEEP with STEWART

One-Man Power Shearing Machine

Machine gets more wool than hand blades from same sheep. Easier to use. Wool grades better—brings better price. The ONE-MAN belts to any engine. Quickly set up. Saves work of one man. Shears fast. $27.50 complete at your dealer or send us $2.00, pay balance on arrival. Send for Stewart catalog of clipping and shearing machines. Made and guaranteed by **Chicago Flexible Shaft Company, 5524 Roosevelt Road, Chicago, U. S. A.**

44 Years making quality products.

heated air out into the room. Some of these heaters look like a radio. Some are round and mounted on a base; some are round and lie down

All ready to reduce chilly atmosphere.

flat. Whatever their shape and whatever their color, bronze or brown, black with chrome trim, or an enamel that matches bedroom or bath, they all give easy comfort without any fires to light.

There are many places where you want that comfort now and then. In the bathroom on chilly mornings when you know it is going to be so warm by noon that it would be foolish to start the furnace again. In the kitchen or bathroom for the baby's bath, and to warm his clothes. In the living room to make a little warm spot on the floor for the children to play in. Late at night when some one comes in chilled to the bone. A comfortable home provides for all these needs.

My sister in law who lives in town has had an electric heater disguised as an attractive grate fire plugged permanently into her fireplace. A light flickers back and forth in the chunks of glass and makes it look like a glowing bed of coals. There is no trouble to get this fire started no matter which way the wind blows. It sends out its cheery glow instantly.

Fan driven heat warms up the room.

Beating the Drouth

(*Continued from page 9*)

him about twenty-five cents per hour for power when he is pumping. In other words, he can apply one acre inch of water for about one dollar's worth of electricity.

These results show how some Virginia farmers have beat the drouth and demonstrate beyond question that irrigation pays. Under favorable conditions and when properly planned and operated, irrigation has proved to be a splended investment and good insurance against loss from drouth. A number of Virginia orchards were irrigated this year with splendid results. Irrigation practice is certain to become more popular throughout the Eastern states as its possibilities become more generally known.

Under The CHESTNUT TREE

College Output

Joe: "Do you think that colleges turn out the best men?"

Jim: "Yes. I was turned out in my freshman year."

Wrong Interpretation

"And what brought you here, my poor man?"

"Well, lady, my father said, when I was a small boy, that he hoped I would marry both beauty and brains, and so I tried to please him."

"Yes?"

"So I'm in jail for bigamy."

A miserly milliohaire was approached by a friend who did his best to persuade him to dress more in accordance with his station in life.

"I'm surprised," said the friend, "that you should allow yourself to become shabby."

"But I'm not shabby," said the miser.

"Oh, but you are," said his friend. "Remember your father. He was always neatly, even elaborately dressed. His clothes were always well-tailored and of the best material."

"Why," shouted the other, triumphantly, "these clothes I'm wearing **were** father's!"

The Loquacious Urge

Whene'er a hen lays eggs with each
She is impelled to make a speech.
The selfsame urge stirs human bones
Whenever men lay corner stones.
—Life.

"The man who gives in when he is wrong," said the orator, "is a wise man, but the man who gives in when he is right is—"

"Married," said a weak voice in the audience.

Politeness or Patriotism

Herbert had been taught to rise when his mother entered the room and to remain standing until she was seated or until she withdrew.

One day a boy friend came to see him. Herbert's mother came into the room where the boys were and Herbert arose. His friend made no move, so Herbert asked him to stand up.

A few minutes later mother again entered the room and Herbert jumped up, while his friend reluctantly rose to his feet.

When Herbert's mother entered the room for the third time and her son arose, the guest said, disgustedly:

"Say, what do you think your mother is—the National anthem?"

What OUR READERS Say

Likes It

To the Editor:

I can't help but tell you how we all enjoy your magazine "E.O.F." And all of the helpful hints we gather from all the different articles, and it seems to me you are improving it every month. Also the cover pictures. We all wait for the next one.

Mrs. H. Broene
Route No. 1
Hudsonville, Mich.

Enjoyed

To the Editor:

Being a woman I enjoy the recipes in your little monthly magazine. I have tried several of them and found them excellent. Dad enjoys the electrical improvement articles and especially about dairy as he is in that business.

We have several electric implements and household goods and could not do without them. Everyone in the family enjoys your magazine.

Miss Clara Peterson
Council Bluffs, Ia.

Renders Aid Against Freezing

To the Editor:

As Oregon has very little severely cold weather, one is not prepared to meet it when it suddenly comes down out of a clear sky. When zero weather made Oregon a prolonged visit last year we would have lost heavily had it not been for electricity.

We kept our electric pump from freezing up by boxing it in and burning a 40-watt light inside the box. Our water pipes were kept open by letting the water run a little all the time, thanks to our electric pump. Our canned fruit and vegetables which were stored in an unheated storeroom were saved by a small electric bathroom heater which we burned intermittently during the cold spell.

Mrs. Eugene B. Tinker
Route No. 1
Creswell, Oregon.

CHROMALOX
SUPER SPEED RANGE UNIT

Boils Faster—
No Current Wasted

Mrs. A. J. Kachik says: "I have one Chromalox unit installed on my range . . . I find everything comes to a boil in much less time. There is no electricity wasted so that means a saving in our light bill."

Try Chromalox Free on your own range without obligation.

Ask your Power Company for details or write to EDWIN L. WIEGAND CO., 7580 Thomas Blvd., Pittsburgh, Pa., Manufacturers Chromalox Electric Heating Units.

Get the Facts!

Prepare for Better Times!

Now is the time to find out how electricity can improve operations on your farm.

Many of your questions can be answered most satisfactorily by our advertisers. Read the advertisements carefully, for these manufacturers are best equipped to help you and will answer your questions without obligation.

Any information that you cannot obtain from advertisers will be supplied if you will fill out and mail the handy coupon below.

FOR WATER SUPPLY:

Automatic Water Systems (*see advt., page* 13)—Pump Jacks—Water Heaters.

FOR THE DAIRY:

Milking Machines—Milk Coolers—Cream Separators—Churns—Bottle Washers—Dairy Sterilizers—Clipping and Grooming Machines (*see advt., page* 15).

FOR POULTRY:

Incubators—Brooders (*see advt., page* 15)—Time Switches—Drinking Fountain Warmers (*see advt., page* 15)—Ultraviolet Light.

FOR THE HOUSEHOLD:

Ranges—Refrigerators—Clothes Washers—Vacuum Cleaners—Ironing Machines—Dishwashers—Flat Irons—Food Preparing Machines—Ice Cream Freezers—Sewing Machines—Table Appliances—Clocks—Range Replacement Units (*see advt., page* 17)—Floor Polishers.

FOR REPAIR AND MAINTENANCE:

Soldering Irons — Tool Grinders — Drills — Paint Sprayers—Woodworking Machinery—Motors.

MISCELLANEOUS:

Feed Grinders—Ensilage Cutters—Corn Shellers—Hay Hoists—Feed Mixers—Stationary Spray Plants (*see advt., page* 13)—Burglar Alarms—Ventilators—Soil Heating Equipment—Radio Sets.

FREE INFORMATION REQUEST

Electricity on the Farm, 24 W. 40th St., New York

Without cost to me, please have manufacturers send complete information on the following Electrically Operated Equipment which I am thinking of buying.

....

....

My name is.....

Address .....

.....

I get electricity from.....

.....3-34

What's New

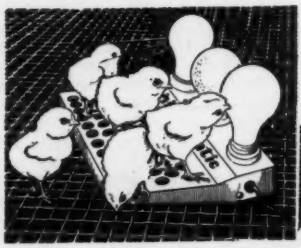
Reviewed by T. E. HIENTON

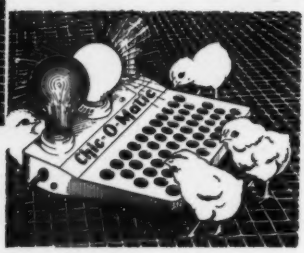
Names and addresses of manufacturers of the articles described in this column will gladly be furnished upon request. Address your requests to What's New Department, ELECTRICITY ON THE FARM, *24 West 40th Street, New York, N. Y.*

Electric Brooder Regulator

Electric brooders for use in colony brooder houses have found considerable favor with farmers in many sections of the country during the past few years. Automatic regulation of the heat supplied has been one of the outstanding features responsible for this increase in use.

A new type of regulator for electric brooders has recently been announced from the Middle West. This regulator differs essentially from other previous devices in that the chicks themselves act as the regulator. Three electric lamps are mounted on a small metal





stand in which a mercury switch is located. The action of this regulator is based on the assumption that chicks when cold will be attracted to the lamps by the heat from them. In crowding to the lamps they will be attracted to a small platform attached to the lamp sockets and switch. The weight of several chicks on the platform tilts it and switch down causing the switch to turn on a large amount of heat. The chicks, after becoming warm, leave the platform and the heat is cut off by the switch although the pilot lamp will continue to burn.

"Electricity on the Farm" Readers Progressive

Although plumbing lightens considerably the work of the farm housewife and probably contributes more to the convenience and comfort of the home than any other equipment, only 944,202 farms had water piped into the dwelling according to the latest records, says the United States Department of Agriculture. This figure represents 16 percent of the total number of farms. The remaining 5,294,446 have little or no plumbing.

It is interesting to note how much more appreciative of the advantages of running water and modern plumbing the readers of ELECTRICITY ON THE FARM are. A recent survey shows that approximately 37% of the families reading this magazine have a completely automatic electric water system. Another 19% have installed an electric pump jack.

When you consider how little it costs to let electricity banish the back-breaking chore of lugging water, it is difficult to understand why every farmer with electric service available hasn't installed some form of electric pumping system.

Losses in Farm Meats Prevented by Chilling

The prompt and thorough chilling of home-butchered pork is an important step in preventing losses from sour hams and shoulders, say meat specialists of the United States Department of Agriculture. If meat is to be kept through the winter in good condition it should be chilled in a temperature below 40° F. The accepted standard ranges from about 36° to 38° F.

To obtain these temperatures in some of the Southern States it may be necessary to use ice or commercial cold storage, since there is always danger of an occasional warm spell coming at a time when the meat is being chilled or cured. Several cases have been reported to the Department of unexpected warm weather causing carcasses to sour in less than 24 hours after the hogs were killed. The cost of ice or cold storage would have been small compared with the loss from spoilage.

In order to make the most efficient use of ice, the Department recommends splitting the carcass down the back, removing the leaf fat, and cutting off the head. The use of a refrigerator will help to prevent losses in curing farm meat. Savings effected through the use of a good refrigerator will pay for the unit in a comparatively short period of time, and at the same time eliminate ice harvesting troubles.

Questions and Answers

(*Continued from page* 13)

slowly until one of the brass stads on the rim of the fly wheel which holds the magnets in place is one inch to the left of a plumb line from the magnets terminal. With the negative lead from the batteries touch a good ground on the car frame about thirty times at intervals of about one second, the magnets should then be charged.

CLASSIFIED ADVERTISING

ELECTRIC BROODER PARTS—Build your own Electric Brooder. We furnish parts—Thermostat Switch, Heating Element, Drawings. With our instructions, common tools and ordinary ability you can construct successful brooders at minimum cost. Write today. INTERSTATE SPECIALTY CO., North Manchester, Ind.

ELECTRIFIED farms now reducing farm fencing costs 80%. Electric ONE-WIRE Fence Units save time, labor and material. Uses short posts, no gates. As secure as concrete and steel. Price complete $24.50 prepaid. Information free. ONE-WIRE FENCE CO., B-11, Whitewater, Wis.

COVER TITLE CONTEST

JANUARY COVER

MARCH RULES

Ten cash prizes will be awarded for the 10 best titles for the picture on the front cover.

The first prize will be $20 cash and nine second prizes of $2 in cash will be awarded.

In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled.

Titles need not be longer than 10 words — the shorter the better — and they do not have to rhyme.

All members of the farm family to whom this magazine was sent may submit titles, but each contestant may submit only one title.

Question "A" must be answered correctly.

Send your title on the coupon below or make out a similar form on a plain sheet of paper or government post card.

Entries must be sent to the Title Editor, ELECTRICITY ON THE FARM, 6 North Michigan Avenue, Chicago, Illinois, before April 1st.

Winning names and titles will be announced in the May issue.

Awards for January

First Prize — $20

"Up peeps the bright morning sun,
To find its work being electrically done."

MISS GENE WINFREE, Route 8, Richmond, Va.

Nine $2.00 Cash Prizes

"When the sun came up, what did it see—
Beautiful plants grown electrically."

MINNIE TARRANT, Rolla, Kansas.

"Science and nature mingle and meet
In hot beds warmed by electric heat."

MRS. CLAIR GREEN,
R.F.D. 1, Monmouth Junction, N. J.

"Modern hotbeds electrically run
Grow healthy plants without the sun."

VERNON BIRKEY, R.F.D. 2, Manson, Iowa.

"Solar whims cause no dismay
With soil heated the electric way."

ALICE N. PARKER, Elba, N. Y.

"Twixt 'Old Sol' above and electric heat below
Seeds just have to sprout and grow."

J. WILLIAM CROWELL,
Star Route, Salem Depot, N. H.

"Healthy plants every one—
Electric hotbeds outwit the sun."

MRS. CLYDE L. BURTON, R.F.D. 1, Fort Wayne, Ind.

"Electric hotbeds grow plants so fine,
That the sun is 'most ashamed to shine."

MRS. R. N. STARR, Greensboro, Ga.

"When old Sol is stubborn and won't come out,
Just turn on the heat and watch things sprout."

MISS MILDRED E. GREGORY, Box 189, Amherst, Va.

"Electric hotbeds have old Sol beat
With 24 hours of steady heat."

MRS. DAVID P. KUMLIN,
R.F.D. 1, Box 67, Hopkinton, Mass.

My title for the March Front Cover picture of ELECTRICITY ON THE FARM is.....

.....

.....

.....

(a) Has the farm loan program helped you or your neighbors?

Yes ☐ No ☐ Maybe ☐

My name is..... R.F.D.....

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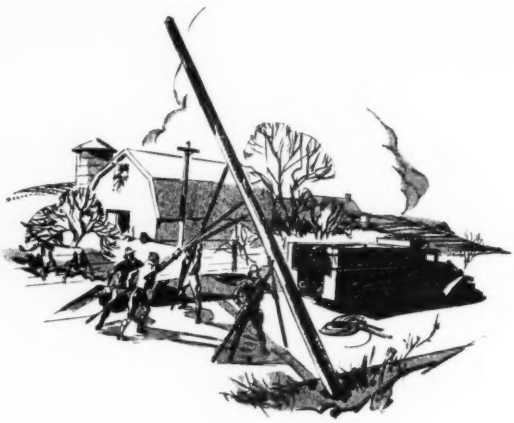

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